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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,878	09/23/2003	Katsumasa Yoshii	9281-4667	3612

7590 11/03/2004
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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/668,878	Applicant(s) YOSHII ET AL.	
	Examiner HOAN C. NGUYEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-28 is/are pending in the application.
- 4a) Of the above claim(s) 21,22,25 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-20,23,24,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/23/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 21 and 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **with** traverse in the reply filed on 20 August 2004. However, in the response applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, and thus the restriction was proper and made final.

Claims 25 and 28 are further withdrawn because the feature "the reflector serves as a transparent electrode" is in non-elected sub-species 3, which is drawn to the reflective-type LCD with the reflecting electrode (not a reflector mounts on the rear side of the LCD). Moreover, the reflector conventionally serves as a electrode for reducing thickness/weight of LCD and increasing image quality due to reflecting directly from the electrode.

Claims 1-16 and 29-38 are canceled. Therefore, claims 17-20, 23-24 and 26-27 is in the elected species.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17 and 26 of U.S. Patent No. 6750930. Although the conflicting claims are not identical, they are not patentably distinct from each other because the inclination of the concave portion measured as an absolute value of an angle with respect to the surface of the base layer of the plane tangle in claim 17 of U.S. Patent No. 6750930 is anticipated with claim 1 of instant application.

Specification

The disclosure is objected to because of the following informalities: there is no where in specification discloses the feature: "at least one of the shapes is a section of an ellipsoid intersecting the reflector surface at an angle other than orthogonal to an ellipsoid axis". Moreover, Figs. 1 and 2 are not likely disclosing the reflector having the shape of ellipsoid.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 17-20 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki et al. (US6130736A).

In regard to claim 17, Sasaki et al. teach (Figs. 2 and 5) a reflector comprising

- a base material (a photo-sensitive resin layer 18) having a light-reflecting surface;
- a plurality of curved portions, said portions formed on a surface of the base material,

wherein

- said curved portions have a plurality of shapes, in which an inclination angle (an absolute value of an angle between a plane tangential to a point on the surface of the curved portion and the surface of the base material) of each said shape is maximized on a side portion of said curved portion due to the heights of the adjoining convex portions of substantial pyramid shape are made different.

Claim 18:

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- an intensity of incident light reflected from the curved portions inherently is preferentially increased in at least one desired angular direction at higher heights of the adjoining convex portions.

Claim 19:

- said shapes are of a concave form as viewed by an observer opposed to the light-reflecting surface as Fig. 2.

Claim 20:

- at least one of the shapes is a section of an ellipsoid intersecting the reflector surface at an angle other than orthogonal to an ellipsoid axis as Fig. 5.

Claims 26 and 27:

- the reflector is mounted on the reflective type LCD, which comprises (Fig. 1 or 2):
 - a pair of substrates 1/2,
 - a liquid crystal layer 3 disposed between the substrates,
 - the reflector 14 disposed on one of the substrates,
 - a transparent intervening layer (a first overcoat layer 17a) disposed on the reflector,
 - a color filter layer 16 disposed on the transparent intervening layer,
 - a transparent planarization layer (a second overcoat layer 17b) disposed on the color filter layer,
 - a transparent electrode (9 made of ITO (indium-tin-oxide)) disposed on the transparent planarization layer 17b,

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- an alignment layer (an orientation film 11) disposed between the transparent electrode and the liquid crystal layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US6130736A) as applied to claims 17-20 and 26 in view of Akins et al. (US6285425B1).

Sasaki et al. fail to teach the reflector with feature in claims 23 and 24.

Akins et al. teach the reflector with base material comprising semitransparent and semi-reflective (or half mirror), thereby forming a semitransparent and semi-reflective liquid crystal display device for dual mode LCD (col. 1 line 67 to col. 2 line 5 and col. 5 lines 55-56 cited "the reflective metallic layer 568 will become discontinuous and; hence, light transmissive") according to claims 19 and 20.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as

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Sasaki et al. disclosed with the reflector with the feature in claims 23-24 for dual-mode LCD as taught by Akins et al. (col. 1 line 64 to col. 2 line 5).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Mizobata et al. (US6266112B1) disclose a reflective liquid crystal display with a convex-concave at the reflecting surface of the reflector wherein a fine control of a shape such as an inclined angle of the convex-concave is difficult.
- Tanada (US6199992B1) discloses a display device using the reflector, which has three-dimensional concavity, such as a spherical concavity, having concave curves in cross section as shown in FIG. 1 or 3.
- Sasaki et al. (US6219120B1) disclose a liquid crystal display with corrugated reflective surface, which are curvature radius less than 100 μ m, a depth about 0.5-5 μ m and the width less than 45 μ m.
- Doriguzzi et al. (US4106859) disclose reflector with light-scattering surface for LCD, wherein chromium layer covering depressions forms reflector.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

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TARIFUR R. CHOWDHURY
PRIMARY EXAMINER